

<b>STN</b>	<b>Polovodičové súčiastky</b> <b>Polovodičové rozhranie pre motorové vozidlá</b> <b>Časť 3: Získavanie piezoelektrickej energie pre</b> <b>snímače motorových vozidiel</b>	<b>STN</b> <b>EN IEC 62969-3</b>  35 8793
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Semiconductor devices - Semiconductor interface for automotive vehicles - Part 3: Shock driven piezoelectric energy harvesting for automotive vehicle sensors

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/19

Obsahuje: EN IEC 62969-3:2018, IEC 62969-3:2018

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**EN IEC 62969-3**

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English Version

**Semiconductor devices - Semiconductor interface for automotive vehicles - Part 3: Shock driven piezoelectric energy harvesting for automotive vehicle sensors  
(IEC 62969-3:2018)**

Dispositifs à semiconducteurs - Interface à semiconducteurs pour les véhicules automobiles - Partie 3: Récupération de l'énergie piézoélectrique produite par les chocs pour les capteurs de véhicules automobiles  
(IEC 62969-3:2018)

Halbleiterbauelemente - Halbleiterschnittstelle für Automobile - Teil 3: Stoßgeführtes piezoelektrisches Energie-Harvesting bei Sensoren für Automobile  
(IEC 62969-3:2018)

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Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN IEC 62969-3:2018****European foreword**

The text of document 47/2461/FDIS, future edition 1 of IEC 62969-3, prepared by IEC/TC 47 "Semiconductor devices" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62969-3:2018.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-03-11
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2021-06-11

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- |                  |      |   |
|------------------|------|---|
| IEC 62047-5:2011 | NOTE | Harmonized as EN 62047-5:2011 (not modified). |
| IEC 62047-7:2011 | NOTE | Harmonized as EN 62047-7:2011 (not modified). |

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60749-5	-	Semiconductor devices - Mechanical and climatic test methods - Part 5: Steady-state temperature humidity bias life test	EN 60749-5	-
IEC 60749-10	-	Semiconductor devices - Mechanical and climatic test methods - Part 10: Mechanical shock	EN 60749-10	-
IEC 60749-12	-	Semiconductor devices - Mechanical and climatic test methods - Part 12: Vibration, variable frequency	EN IEC 60749-12	-
IEC 62830-1	-	Semiconductor devices - Semiconductor devices for energy harvesting and generation - Part 1: Vibration based piezoelectric energy harvesting	-	-



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# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Semiconductor devices – Semiconductor interface for automotive vehicles –  
Part 3: Shock driven piezoelectric energy harvesting for automotive vehicle  
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**Dispositifs à semiconducteurs – Interface à semiconducteurs pour les véhicules  
automobiles –  
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# INTERNATIONAL STANDARD

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**Semiconductor devices – Semiconductor interface for automotive vehicles –  
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Partie 3: Récupération de l'énergie piézoélectrique produite par les chocs pour  
les capteurs de véhicules automobiles**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

SEMICONDUCTOR DEVICES –  
SEMICONDUCTOR INTERFACE FOR AUTOMOTIVE VEHICLES –

**Part 3: Shock driven piezoelectric energy harvesting  
for automotive vehicle sensors**

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International Standard IEC 62969-3 has been prepared by IEC technical committee 47: Semiconductor devices.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
47/2461/FDIS	47/2480/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62969 series, published under the general title *Semiconductor devices – Semiconductor interface for automotive vehicles*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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## INTRODUCTION

The IEC 62969 series is composed of four parts as follow:

- IEC 62969-1, *Semiconductor devices – Semiconductor interface for automotive vehicles – Part 1: General requirements of power interface for automotive vehicle sensors*
- IEC 62969-2, *Semiconductor devices – Semiconductor interface for automotive vehicles – Part 2: Efficiency evaluation methods of wireless power transmission using resonance for automotive vehicle sensors*
- IEC 62969-3, *Semiconductor devices – Semiconductor interface for automotive vehicles – Part 3: Shock driven piezoelectric energy harvesting for automotive vehicle sensors*
- IEC 62969-4<sup>1</sup>, *Semiconductor devices – Semiconductor interface for automotive vehicles – Part 4: Evaluation method of data interface for automotive vehicle sensors*

The IEC 62969 series covers power and data interfaces for sensors in automotive vehicles. The first part covers general requirements of test conditions such as temperature, humidity, vibration, etc for automotive sensor power interface. This part also includes various electrical performances of power interface such as voltage drop from power source to automotive sensors, noises, voltage level, etc. The second part covers “Efficiency evaluation methods of wireless power transmission using resonance for automotive vehicle sensors “. The third part covers “Shock driven piezoelectric energy harvesting for automotive vehicle sensors”. The fourth part covers “Evaluation methods of data interface for automotive vehicle sensors”.

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<sup>1</sup> To be published

## SEMICONDUCTOR DEVICES – SEMICONDUCTOR INTERFACE FOR AUTOMOTIVE VEHICLES –

### Part 3: Shock driven piezoelectric energy harvesting for automotive vehicle sensors

#### 1 Scope

This part of IEC 62969 describes terms, definitions, symbols, configurations, and test methods that can be used to evaluate and determine the performance characteristics of mechanical shock driven piezoelectric energy harvesting devices for automotive vehicle sensor applications.

This document is also applicable to energy harvesting devices for motorbikes, automobiles, buses, trucks and their respective engineering subsystems applications without any limitations of device technology and size.

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60749-5, *Semiconductor devices – Mechanical and climatic test methods – Part 5: Steady-state temperature humidity bias life test*

IEC 60749-10, *Semiconductor devices – Mechanical and climatic test methods – Part 10: Mechanical shock*

IEC 60749-12, *Semiconductor devices – Mechanical and climatic test methods – Part 12: Vibration, variable frequency*

IEC 62830-1, *Semiconductor devices – Semiconductor devices for energy harvesting and generation – Part 1: Vibration based piezoelectric energy harvesting*

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